REMARKS

This is a response to the Office Action dated July 27, 2005. Claims 1-14 are pending in the application and Claims 1-14 stand rejected.

By this response, arguments traversing the rejection are presented, along with a clean copy of the claims. Support for the foregoing amendment can be found in the original specification, claims or drawings – no new matter has been introduced.

In view of the remarks below, Applicant respectfully requests reconsideration and further examination of the present claimed invention.

35 U.S.C. § 103 CLAIM REJECTION

Claims 1-3, 5, 7-12 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,707,809 issued to Warrier et al. (hereinafter, Warrier) in view of U.S. Patent No. 6,407,988 B1 issued to Agraharam et al. (hereinafter, Agraharam). Claims 4 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Warrier in view of Agraharam and further in view of U.S. Patent Publication No. 2001/0046223 A1 by Malki et al (hereinafter, Malki). Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,567,664 issued to Bergenwall et al (hereinafter, Bergenwall) in view of Agraharam. Applicant respectfully traverses the rejection and requests that the rejections be withdrawn.

ABOUT THE CLAIMED INVENTION

The claimed invention is directed to a technique for enabling a portable and/or mobile host, using the Mobile IP protocol, to dynamically acquire a home

address in a manner consistent with the Dynamic Host Configuration Protocol when powering up in a foreign network. Ordinarily, mobile hosts that power up in a foreign network cannot contact addressing servers in their home network. The present claimed invention provides for a solution through transient tunneling – a two-stage addressing procedure for mobile hosts that power up in a foreign network. A bootstrapping agent – an addressing element that is co-located with a Mobile-IP home agent facilitates the creation of the temporary tunnel over which standard DHCP transactions can take place.

REFERENCES

The Office cites Warrier, Agraharam, Malki, and Bergenwall in the § 103 rejection. Warrier discloses a method for forwarding data from a source of the data to a mobile wireless node that undergoes a transition to an idle state. (Abstract) Warrier teaches a mobility binding record (MBR) that is maintained by the foreign agent if the mobile node is connected, or by the home agent for currently registered and active mobile nodes. (Col. 6, lines 43-44) The MBR maintains certain identifying information, such as home agent IP address, foreign agent care of address, serial number or IMSI number. The MBR associates nodes in a database with the last foreign agent to which the mobile node was connected. (Col. 3, lines 65-67)

Warrier does not teach a bootstrapping agent that temporarily assigns an IP address upon power up in a foreign network. Warrier teaches merely a listing of previous address registrations of mobile nodes. Warrier does not teach using a mobile device to establish a connection to a DHCP server for dynamic addressing as it powers up in a network other than the home network and does not provide for

a means to establish a connection to the home DHCP server using mobile IP protocol.

Agraharam teaches a method of providing mobility support to a mobile host through a virtual mobile IP protocol, in which home agents and foreign agents are located in a "mobility aware" access network. (Abstract) Participating mobile hosts are assigned a "virtual home address", that is actually an address of the home agent. (Col. 1, lines 53-56) In addition, a "pseudo home agent", located near to a transmitting mobile host, acts as home agent of a destination mobile host. (Col. 1, lines 63-66) The pseudo home agent bypasses the true home agent and tunnels data directly between the transmitting and destination mobile nodes. (Col. 2, lines 1-3) Agraharam teaches a mobility aware IP network (MAIN) (Col. 2, lines 34-36), that enhance privacy by using a home address unrelated to the actual mobile host's home network. (Col. 10, lines 1-3)

Agraharam does not teach DHCP servers for dynamic addressing of mobile hosts from a home server, rather, merely describes DHCP servers as included in an IP network. (Col. 3, lines 12-13, Col. 3, lines 32-37) The method of Agraharam lacks any suggestion to use DHCP servers for dynamic addressing that uses the IP address of the home network for the mobile host, but rather teaches using a home address unrelated to the host's home network.

Malki discloses a method for routing of packets intended for a mobile node to the mobile node's current address. (Abstract) Malki does not teach a pool of addresses that enables a mobile host powering up in a foreign network to establish a temporary address, and use the temporary address to facilitate tunneling of IP address information from the home network's DHCP server, but rather merely provides for *efficient use* of IPv6 addresses. (Abstract)

Bergenwall discloses an extension to the Registration Request sent from the mobile node to the home agent, which provides authorization to re-register the mobile node with the home agent of the mobile node's home network. (Col. 4, lines 32-34, 39-41) Bergenwall teaches a mobile node *roaming* in a foreign network, and does not teach a mobile host powering up in a foreign network. (Abstract & Col. 6, lines 37-39)

CLAIM ANALYSIS FOR § 103 REJECTION

Independent Claims 1, 9, 10, 12 & 14

Independent Claim 1 recites a technique that allows a mobile host to power up in a foreign network, using mobile IP protocol, and to contact addressing servers in the home network by transient tunneling. Transient tunneling is carried out by a bootstrapping agent that "works cooperatively with a mobile IP home agent to allocate a temporary home address to a mobile host" and using the temporary home address to "create a temporary tunnel between a foreign agent associated with the portable and/or mobile host and the mobile IP home agent, wherein the tunnel is used to communicate configuration information including a permanent home address allocated by a DHCP protocol".

The cited references do not teach or suggest this method. Warrier does not teach or suggest creating a "bootstrapping agent that works cooperatively with a mobile IP home agent to allocate a temporary home address to the host;" and "using the temporary home address to create a temporary tunnel between a foreign agent associated with the host and the mobile IP home agent, wherein the temporary tunnel is used to communicate configuration information including a permanent home address allocated by DHCP protocol" as recited in Claim 1.

The Office acknowledges that dynamic addressing by a DHCP server is not taught by Warrier, but argues that Agraharam teaches DHCP servers for addressing protocol in the same manner as recited in Claim 1. (Office Action, Page 3, paragraph 5). Applicant respectfully disagrees.

The present claimed invention defines a method that allows a mobile host in a foreign network to power up and connect to the Internet by dynamically acquiring the IP address of the home network.

Warrier teaches a mobility binding record (MBR) that maintains certain identifying information in the form of a table or list, but does **not** provide for dynamic addressing of a permanent IP address of the home network. (Col. 6, lines 43-47) The MBR is **not** an addressing element as taught by the present claimed invention. The MBR, rather, *lists* the mobile node's IP address, the IP address of the foreign agent, the IMSI number, ESN number and lifetime values in tabular form. (Col. 6, lines 43-47) Furthermore, the MBR does **not** facilitate power-up in a foreign network and communication with the remote DHCP home server. Whereas, the bootstrapping agent of the present claimed invention is an addressing element that allocates a *temporary address* in order to establish a connection to the home DHCP server. Warrier teaches an MBR that is *maintained* (not temporary) and associates unique information identifying an *idle* mobile node with the foreign agent with which the mobile node *last initiated a connection*. (Col. 3, lines 39-43) The MBR of Warrier facilitates downstream addressing needs (once a mobile node is connected and mobile) and when the mobile node has transitioned from an active to idle state, or vice verse. (Col. 3, lines 45-48). It is important to note that the *idle* state described by Warrier is not equivalent to the state of *power-off.*

Whereas, the bootstrapping agent of the present claimed invention, is an upstream addressing agent that initiates communication to a DHCP server upon *power-up*.

Contrary to the statement of the Office, Applicant fails to see where the method of Warrier provides for the act of *power-up in a foreign network* that allows the mobile node to dynamically acquire the IP address of the home network. While Warrier teaches a *PPP connection*, it does not teach the connection in concert with dynamic addressing. Point to Point protocol allows a computer to connect to the Internet using a standard dial-up line and a modem, but it does not dynamically assign IP addresses - as taught by the method of Applicant. Warrier discloses a method for *forwarding data to a mobile node that undergoes a transition to an idle state*, which implies some prior upstream events (such as power-up) not taught by the method.

Contrary to the statement of the Office, Warrier does not teach transient tunneling between a mobile host and a DHCP server in the home network as the host powers up in a foreign network. Warrier teaches *re-establishing* a connection between a foreign agent and a mobile node by paging. When the mobile node responds to the page it re-establishes a connection by registration – it dials in to the foreign network, meaning the mobile node changes from *idle to active*. The mobile node may then receive data from the home agent *using known mobile IP tunneling techniques*. (Col. 4, lines 39-43) Therefore, tunneling described by Warrier, is merely packet "readdressing" and not a conduit for dynamic addressing protocol between a mobile host and a DHCP server, as taught by the present claimed invention.

The Office also cites Agraharam in its §103(a) rejection. Applicant respectfully asserts that there is no motivation to combine the teachings of

Agraharam and Warrier, and furthermore, the combination teaches away from the present claimed invention.

Agraharam teaches a method for providing mobility support to a mobile host. (Abstract) The method involves a "mobility aware" IP network that enhances privacy by using a home address **unrelated** to the actual mobile hosts' home network. (Col. 10, lines 1-3) The method of Agraharam lacks any suggestion to use DHCP servers for dynamic addressing that uses the IP address of the home network for the mobile host, but rather teaches using a home address unrelated to the host's home network. The method of Agraharam does not get you to the home address; the mobile host's home address and virtual home address have **no relationship**. (Col. 5, lines 20-25) Agraharam fails to teach DHCP servers for dynamic addressing protocol from a home server, and only *describes* DHCP servers as *included in an IP network.* (Col. 3, lines 12-13 and Col. 3, lines 32-37) In fact, the only mention of DHCP and addressing is a DHCP server that allocates a **temporary** foreign address on a foreign network. (Col. 7, lines 13-15) Therefore, Agraharam does not teach a DHCP server that dynamically assigns the IP address of the home network to a mobile host. Applicant respectfully asserts that the brief reference to DHCP servers is illustory and does not teach or suggest the method of Applicant. Thus, there is no motivation to use the method of Agraharam for dynamic addressing as taught by Applicant, and in all actuality the method of Agraharam teaches away from the method of applicant by assigning an address that has no relationship to the home network of the host.

Dynamic home addressing, as required when a mobile host powers up in a foreign network, is not specified in the Mobile-IP standard. Therefore, a mobile host that powers up in a foreign network with no home address **cannot** contact

addressing servers in its home network through conventional DHCP broadcasting. Any upstream broadcast messages sent from the mobile host to the home network will be received by a local server or relay in the foreign network, which may offer an address from its own lease pool, but **not** that the host's home network. Thus, Applicant maintains that the cited references do not teach the method of Applicant, nor is there a motivation to combine the references, as even a combination of Warrier and Agraharam will not provide for the method as claimed by Applicant.

Accordingly, the combination of Warrier and Agraharam fails to teach or suggest Claim 1. Applicant respectfully believes that the two primary references cited by the Office as the basis for rejecting Claim 1 were not properly combined because neither reference teaches or suggests a mobile device to connect to the Internet when outside of the home network and dynamically acquire the IP address of the home network by DHCP. Applicant respectfully requests that the §103(a) rejection of Claim 1 be withdrawn, As the same argument applied to the interpretation of Claims 9, 10, 12 and 14, for the same reasons, Applicant respectfully requests that the §103(a) rejection be withdrawn.

Claims 2-8 depend from Claim 1 and are allowable by virtue of this dependency. Additionally, these claims recite additional features that, when taken together with those of Claim 1, define methods that are not taught or suggested by the Warrier/Agraharam combination.

Claim 4 & 6 are rejected under §103(a) as being unpatentable over Warrier in view of Agraharam, in further view of Malki. As outlined above in the analysis of Claim 1, Applicant respectfully asserts that Warrier and Agraharam fail to teach or suggest the method of Applicant. Furthermore, Agraharam teaches away from

a method of using DHCP to assign a permanent *home* IP address to a mobile host powering up in a foreign network. Applicant asserts that the additional reference of Malki does nothing to cure this defect. Malki teaches a method for routing packets to a mobile node by routing packets to the mobile nodes current address. Malki does not teach DHCP servers or dynamic addressing, but merely provides for efficient use of IPv6 addresses. (Abstract) The method of Malki fails to teach a mobile host that powers up in a foreign network that acquires the IP address of the home network.

Independent Claim 13

Independent Claim 13 recites a method that allows a mobile host powering up in a foreign network to use standard mobile IP protocol to contact addressing servers in the home network by establishing a temporary IP tunnel to communicate addressing information from the home server to the mobile host, thereby allowing the mobile host to use the IP address of the home network.

The cited references fail to teach or suggest this method. Bergenwall fails to teach a tunnel for mobile IP broadcasting that connects the mobile IP host to a home DHCP server as taught by the method of Applicant. Agraharam, as discussed above, teaches away from the method of Applicant.

Bergenwall teaches registration requests for mobile nodes while roaming on a foreign network. The method of Bergenwall teaches an extension attached to the registration request sent from the mobile node to the home agent, which provides authorization to re-register the mobile node with the home agent of the mobile node's home network. (Col. 4, lines 32-34 & lines 39-41) Bergenwall

teaches a mobile node *roaming* in a foreign network (Abstract & Col. 6, lines 37-39) and fails to teach a mobile host *powering up* in a foreign network.

Dynamic home addressing, as required when a mobile host powers up in a foreign network, is not specified in the Mobile-IP standard. Therefore, a mobile host that powers up in a foreign network with no home address **cannot** contact addressing servers in its home network through conventional DHCP broadcasting. Any upstream broadcast messages sent from the mobile host to the home network will be received by a local server or relay in the foreign network, which may offer an address from its own lease pool, but **not** that the host's home network.

Agraharam, as discussed in the claim analysis above, teaches a method that involves a "mobility aware" IP network that enhances privacy by using a home address **unrelated** to the actual mobile hosts' home network. (Col. 10, lines 1-3) The method of Agraharam does not get you to the home address; the mobile host's home address and virtual home address have **no relationship**. (Col. 5, lines 20-25) Thus, Applicant respectfully maintains its belief that the cited reference teaches away from the method of Applicant.

Accordingly, the combination of Bergenwall and Agraharam fails to teach or suggest Claim 13. Applicant respectfully requests that the § 103(a) rejection of Claim 13 be withdrawn. Applicant respectfully believes that the two primary references cited by the Office as the basis for rejecting Claim 1 were not properly interpreted because neither reference teaches or suggests a method whereby a mobile device can connect to the Internet when outside of the home network and dynamically acquire the IP address of the home network by DHCP.

Conclusion

In view of the foregoing amendments and remarks, Applicant submits that claims 1-14 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. If any issues remain that preclude issuance of this application, the Office is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,
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Dated: _____

By: _____

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